

In the Claims:

Please cancel claim 13.

Please amend claims 1, 11, 19 and 22 as set forth below in the "Listing of Claims".

LISTING OF CLAIMS

Claim 1 (Currently Amended): A plasma processing unit comprising:
a processing container whose inner pressure can be reduced,
a first electrode arranged in the processing container, for placing a substrate to be processed thereon,
a process gas supplying unit that supplies a process gas into the processing container,
a tubular supporting part that supports the first electrode, the tubular supporting part forming a space together with a bottom surface of the first electrode such that said space is disposed within the tubular supporting part below the first electrode, and
a high-frequency electric power supplying part arranged in the space, including a first high-frequency electric power source that outputs first high-frequency electric power having a first frequency,
the first high-frequency electric power transmitted from the first high-frequency electric power source to the first electrode is adapted to generate plasma in such a manner that the substrate to be processed can undergo a plasma process by means of the plasma, and the high-frequency electric power supplying part further includes: a first matching unit for impedance matching of the first frequency, and a transmission line that transmits the first high-frequency electric power from the first high-frequency electric power source to the first matching unit.

Claim 2 (Withdrawn): A plasma processing unit according to claim 1, wherein the length of the transmission line is shorter than $\lambda/2$, λ being a wavelength of the third harmonic wave of the high-frequency electric power, and with respect to the third harmonic wave of the high-frequency electric power, an output terminal of the high-frequency electric power source and an input terminal of the matching unit are electrically short-circuited ends, respectively.

Claim 3 (Previously Presented): A plasma processing unit according to claim 1, wherein the transmission line has a length which is shorter than $3\lambda/4$, λ being a wavelength of a third harmonic wave of the first high-frequency electric power, and with respect to the third harmonic wave of the first high-frequency electric power, an output terminal of the high-frequency electric power source is an electrically short-circuited end and an input terminal of the first matching unit is an electrically open end.

Claim 4 (Previously Presented): A plasma processing unit according to claim 1, wherein the first high-frequency electric power source includes: a first high-frequency electric power generating part that generates the first high-frequency electric power when direct-current power is supplied thereto, and a filter that selectively allows the first high-frequency electric power from the first high-frequency electric power generating part to pass therethrough.

Claim 5 (Previously Presented): A plasma processing unit according to claim 4, wherein the first high-frequency electric power source further includes a circulator that allows a forward wave from the first high-frequency electric power generating part to pass therethrough and that absorbs a reflected wave from the first matching unit, between the first high-frequency electric power generating part and the filter.

Claim 6 (Original): A plasma processing unit according to claim 1, wherein the transmission line consists of a coaxial cable.

Claim 7 (Previously Presented): A plasma processing unit according to claim 1, wherein the first frequency is not less than 70 MHz.

Claim 8 (Original): A plasma processing unit according to claim 1, wherein a second electrode is arranged in the processing container in parallel with and opposed to the first electrode.

Claim 9 (Original): A plasma processing unit according to claim 8, wherein the substrate to be processed is adapted to be placed on the first electrode, and a vent hole is provided in the second electrode to jet out the process gas toward the first electrode.

Claim 10 (Canceled)

Claim 11 (Currently Amended): A high-frequency electric power supplying unit, comprising:

- a first high-frequency electric power source that outputs first high-frequency electric power having a first frequency,

- a first matching unit for impedance matching of the first frequency, and

- a transmission line that transmits the first high-frequency electric power from the first high-frequency electric power source to the first matching unit, wherein:

- the high-frequency electric power supplying unit is arranged in a space and further arranged for a plasma processing unit, the plasma processing unit including:

- a processing container whose inner pressure can be reduced;

- a first electrode arranged in the processing container, for placing a substrate to be processed thereon;

- a process gas supplying unit that supplies a process gas into the processing container; and

- a tubular supporting part that supports the first electrode, the tubular supporting part forming the space together with a bottom surface of the first electrode such that said space is disposed within the tubular supporting part below the first electrode;

- wherein the first high-frequency electric power transmitted from the first high-frequency electric power source to the first electrode is adapted to generate plasma in such a manner that the substrate to be processed can undergo a plasma process by means of the plasma;

- further wherein the transmission line has a length which is shorter than $3\lambda/4$, λ being a wavelength of a harmonic wave of the first high-frequency electric power, and with respect to the third harmonic wave of the first high-frequency electric power, an output

terminal of the first high-frequency electric power source is an electrically short-circuited end and an input terminal of the first matching unit is an electrically open end.

Claim 12 (Withdrawn): A high-frequency electric power supplying unit according to claim 11, wherein the length of the transmission line is shorter than $\lambda/2$, λ being a wavelength of the third harmonic wave of the high-frequency electric power, and with respect to the third harmonic wave of the high-frequency electric power, an output terminal of the high-frequency electric power source and an input terminal of the matching unit are electrically short-circuited ends, respectively.

Claim 13 (Canceled)

Claim 14 (Previously Presented): A high-frequency electric power supplying unit according to claim 11, wherein the first high-frequency electric power source includes: a first high-frequency electric power generating part that generates the first high-frequency electric power when direct-current power is supplied thereto, and a filter that selectively allows the first high-frequency electric power from the first high-frequency electric power generating part to pass therethrough.

Claim 15 (Previously Presented): A high-frequency electric power supplying unit according to claim 14, wherein the first high-frequency electric power source further includes a circulator that allows a forward wave from the first high-frequency electric power generating part to pass therethrough and that absorbs a reflected wave from the first matching unit, between the first high-frequency electric power generating part and the filter.

Claim 16 (Previously Presented): A high-frequency electric power supplying unit according to claim 15, wherein the first high-frequency electric power generating part is connected via a cable to a direct-current power source that converts alternating-current power of commercial frequency into the direct-current power.

Claim 17 (Original): A high-frequency electric power supplying unit according to claim 11, wherein the transmission line consists of a coaxial cable.

Claim 18 (Previously Presented): A high-frequency electric power supplying unit according to claim 11, wherein the first frequency is not less than 70 MHz.

Claim 19 (Currently Amended): A plasma processing unit according to claim ~~1~~ 4, wherein the filter has an output terminal connected to the transmission line as an electrically short-circuited end with respect to a harmonic wave of the first high-frequency electric power.

Claim 20 (Previously Presented): A plasma processing unit according to claim 1, wherein the first high-frequency electric power and a second high-frequency electric power having a second frequency are adapted to be transmitted to the first electrode, and the high-frequency electric power supplying part further includes a second matching unit for impedance matching of the second frequency.

Claim 21 (Previously Presented): A plasma processing unit according to claim 20, wherein the high-frequency electric power supplying part has three vertically-stacked boxes; and the first high-frequency electric power source, the first matching unit and the second matching unit are contained in the three boxes, respectively.

Claim 22 (Currently Amended): A high-frequency electric power supplying unit according to claim ~~11~~ 14, wherein the filter has an output terminal connected to the transmission line as an electrically short-circuited end with respect to a harmonic wave of the first high-frequency electric power.

Claim 23 (Previously Presented): A high-frequency electric power supplying unit according to claim 11, wherein the first high-frequency electric power and a second high-

frequency electric power having a second frequency are adapted to be transmitted to the first electrode, and the high-frequency electric power supplying part further includes a second matching unit for impedance matching of the second frequency.

Claim 24 (Previously Presented): A high-frequency electric power supplying unit according to claim 23, wherein the high-frequency electric power supplying part has three vertically stacked boxes; and the first high-frequency electric power source, the first matching unit and the second matching unit are contained in the three boxes, respectively.